# Impact of Physical Disability on Activities of Daily Living Among Injured Military Fighters

Jamal Abdul-Adheem Burhan[1], Salma K. J. Al-brahemi[2]
1Academic Nursing Specialist, Major, Ministry of Defense-Iraq, Department of Community Health Nursing, College of Nursing, University of Babylon-Iraq.
Email: jamal.azim.nurh39@student.uobabylon.edu.iq.
2Prof., Ph.D., College of Nursing/University of Babylon-Iraq.
Email: sal3456ma@gmail.com

**Abstract**
Background: The term "activities of daily living" (ADLs) refers to the fundamental skills required for independent self-care, such as eating, bathing, and moving around. Inability to execute fundamental daily chores may result in harmful situations and a low quality of life. Measuring someone's ADL is significant since it predicts admission to specialized care homes, the need for alternative living arrangements, hospitalization, and the use of professional home care. Objectives: The study aims to assess the physical disability of the military wounded, evaluate the activities of the injured military fighters in daily life, and know the relationship between the activities of the physically disabled military fighters in daily life and the clinical data with socio-demographic characteristics such as (age, residence, education, marital status, socioeconomic status). Methodology: A descriptive cross-sectional study design was used to assess the impact of physical disability on activities of daily living among injured military fighters. The research was conducted throughout the period September 19th 2021 to May 1st 2022. A convenient sample of (120) injured military fighters from Third Rehabilitation Center for the wounded was selected to accomplish the objectives of the study. One of the tools that were used to build the questionnaire was to measure the "Impact of physical disability on activities of daily living among injured military fighters". Results: The results revealed that the wounded fighters had moderate to severe physical disability in 49.2% of them suffer from moderate disability (176.54 ± 35,386), while 45.8% of them suffer from severe disability and 59.2% of the wounded fighters show moderate dependency in their daily life. Life activities (77.033 ± 11.707 Injured fighters have a moderate dependence on nutrition for daily activities, and 89.2 percent of injured fighters have a moderate function in daily activities (62.14 6.292). The result shows that there is a significant relationship between independence in activities of daily living and basic function in activities of daily living with regard to age, education level, number of children and marital status of injured fighters. Conclusion: The activities of daily living of physically disabled fighters are moderate as a result of physical disability. Sociodemographic age, education level, and socioeconomic status influence the daily life activities of physically disabled fighters. Physically disabled fighters suffer from their physical, emotional and social handicap as stated in their testimony. Mildly physically disabled fighters depend on others to complete their daily activities and need assistance with automated functions. Recommendations: Collaboration between the Ministry of Defense and the Ministry of Health in building and implementing health education programs regarding the promotion of daily life activities for physically disabled fighters. The Department of Defense should prioritize injured fighters in rehabilitation programs to enhance their standard of living, in addition to supporting them financially. Further nationwide research could be conducted on a large sample of physically disabled fighters focusing on a variety of relevant variables that may affect their daily activities in the future.
Keywords: Injured Military Fighters, Physical Disability

## 1. Introduction

The term "activities of daily living" (ADLs) refers to the core skills required to care for oneself independently, such as eating, bathing, and mobility. Sidney Katz invented the term "activities of daily living" in 1950. ADL is used to assess a person's functional status. The incapacity to conduct ADLs necessitates the use of other people and/or mechanical devices. Inability to do basic daily chores may result in harmful situations and a low quality of life. ADL measurement is significant because it predicts admission to nursing homes, the requirement for alternative living arrangements, hospitalization, and the usage of paid home care. A patient's ADLs can also be used to evaluate the success of a treatment program (Stroke Rehabilitation Unit Orientation, 2021).

Nurses are frequently the first to notice when a patient's functioning deteriorates during hospitalization; thus, routine screening of ADLs is essential, and nursing assessment of ADLs is undertaken on all hospitalized patients. A person's capacity to fulfill personal goals and maintain independent living may be impacted by hospitalization for an acute or chronic disease. Chronic illnesses worsen with time, resulting in physical decline and loss of ability to perform ADLs. (Klimczuk, 2016). As a result of conflict, several bodily injuries impacting human health might occur. Bullets,

doi.org/10.31838/hiv22.02.825 Received: 25.07.21, Revised: 13.08.21, Accepted: 08.09.21

explosions, fire, and chemical weapons can all inflict serious bodily harm to persons involved in battles. (Amini et al., 2010). Physical disability is a well-known notion. Despite being a societal issue, it is directly tied to nursing. (Neugebauer & Tóthová, 2019). In addition to the physical and emotional implications of disability, other psychosocial difficulties such as stigma, negative stereotyping, devalued social position, and mistaken labeling can all have a detrimental impact on one's quality of life. Soldiers with acquired disabilities frequently encounter disruption in social relationships and social support networks, including friends and family, and face a slew of architectural, social, policy, and attitudinal hurdles, resulting in a slew of disadvantages. (Lundberg et al., 2011). The general nursing point of view connects individual opinions and defines physical disability as any pathological change in the locomotive system that leads to the limitations of the physiological function of bones, joints, muscles, tendons and finally life- style. Hence, fighters should be properly managed to bring them back to their previous level of performance in order to prevent them from becoming a burden on their families for the rest of their lives. Disabilities can be assessed through activities of daily living and automated activities of daily living which are routine tasks performed as a wounded soldier on a daily basis and are necessary for independent living without any assistance (Hassan & Hasan, 2020).

### Objectives of Study are

1. To assess the physical disability injured military fighters.
2. To assess the injured military fighters' activities of daily living.
3. To find out the relationship between the physically disabled military fighter daily living activities and their socio-demographic characteristics such as (age, residence, education, marital status, socioeconomic status).

## 2. Methodology

### Design of the Study

A descriptive cross-sectional study design was used to assess the impact of physical disability on activities of daily living among injured military fighters. The research was conducted throughout the period September 19th 2021 to May 1st 2022.

### Setting of the Study

The research was carried out on injured military fighter were who followed up the (order center) of rehabilitation of wounded and people with special needs within the Iraqi ministry of defense (except the Kurdistan region). /Order (center 3).

### The Sample of the Study

The target population was composed of (826) injured military fighters. And to obtain the appropriate sample for the research, the researcher used (Steven Thompson's equation) and after performing the calculation, the result was 116 solders. A convenient sample of (120) injured military fighters from Third Rehabilitation Center for the wounded was selected to accomplish the objectives of the study.

### The Instruments of Study

The study was conducted on injury military fighter within the Iraqi Ministry of Defense. One of the tools that were used to build the questionnaire was to measure the "Impact of physical disability on activities of daily living among injured military fighters". The researcher depended also on the physical disability the Arabic version (Moussa et al., 2017). And daily activities Scale the Arabic version (Abde Nasser, 2020) .

The Questionnaire included six parts:

- **Part I**: Sociodemographic data such as (age, marital status, location, education level, No. of children, structure family, occupation status, economic status)
- **Part II**: General data such as (body mass index, smoking habit, degree of relation)
- **Part III**: Medical history such as (chronic disease, percentage of impairment, type of injury and site of injury)
- **Part IV**: The Roland-Morris Disability Scale (RMDS) Questionnaire, in this section, 24 items (Because of my injury, I spend the most of my time at home. Because of my injury, I spend most of my time in bed).
- **Part V**: Independence in activity of daily living scale (IADLS) which consists of (6) items (Eating and Feeding Domain), (7) items (Bathing Domain), (8) items (Grooming Domain), (7) items (Dressing and undressing Domain), (7) items (Toileting and Continence Domain), and (8) items (Transfers Domain). using three levels Likert rating scale (always, sometimes, never) they have been rated and scored as (1) for never, (2) for some time, (3) for always.
- **Part VI** Instrumental in activity of daily living subscale: which consists of (4) items (Ability to use Telephone Domain), (4) items (Shopping Domain), (4) items (Food preparation Domain), (5) items (Housekeeping), (3) items (Laundry Domain), (5) items (Mode of transportation Domain), and (3) items (Responsibility for own medications Domain), and (3) items (Ability to handle finances Domain). using three levels Likert rating scale (always, sometimes, never) they have been rated and scored as (1) for never, (2) for some time, (3) for always.

### The Study Instruments Validity

The instruments were given to a panel of experts in various disciplines (nursing and medicine) to assess the questionnaire validity, draft of the questionnaire was shown to 32 experts to ensure that it was valid.

### Pilot Study

Before starting work, the pilot study was conducted

on injury military fighter in the Ministry of defense. For the period from the 18th February 2022 to 2th march 2022. The sample of the pilot study was not entered in the research's sample major.

### Reliability of the Questionnaire

The reliability of the physical disability scale (PDS) was determined as a result of conducting a pilot study; the Cronbach's Alpha table (3) results indicated that the reliability is = 0.825, and reliability (Ingham-Broomfield, 2014).

## 3. Methods of Data Collection

After completing the expert's responses and completing all official approvals by the researcher, the questionnaire and data collection were administered by the researcher after completing the official approvals that would allow the researcher the opportunity to do his work to complete the scientific research. The questionnaire was conducted by the researcher personally using the appropriate sampling method. Data were collected from 5th February to 26th March 2022, using the self-report method used. A questionnaire was included 120 injured military fighters, identified by the researcher. This is to ensure that the questionnaire reaches the number likely to achieve the actual sample size.

### 3.9. Statistical Data Analysis

Statistical Package of Social Sciences (SPSS) version 25 and Microsoft Excel (2019) were used to analyze the data. To assess and evaluate the study's findings.

## 4. Results of the Study

| Table 1: Distribution of Sample According to their Socio-Demographic Characteristics | | | | |
|---|---|---|---|---|
| List | Characteristics | | f | % |
| 1 | Age | 20 – 29 years | 22 | 18.4 |
| | | 30 – 39 years | 55 | **45.8** |
| | | 40 – 49 years | 33 | 27.5 |
| | | 50 – 59 years | 9 | 7.5 |
| | | 60 ≤ year | 1 | .8 |
| | | **Total** | **120** | **100** |
| | | **Mean ±Standard deviation** | **36.97±8.522 year** | |
| 2 | Level of education | Primary school | 36 | **30** |
| | | Middle school | 19 | 15.8 |
| | | Secondary school | 35 | 29.2 |
| | | Diploma + | 30 | 25 |
| | | **Total** | **120** | **100** |

| Table 1: Continued | | | | |
|---|---|---|---|---|
| List | Characteristics | | f | % |
| 3 | Marital status | Unmarried | 16 | 13.3 |
| | | Married | 87 | **72.5** |
| | | Widower | 2 | 1.7 |
| | | Divorced | 8 | 6.7 |
| | | Separated | 7 | 5.8 |
| | | ***Total*** | ***120*** | ***100*** |
| 4 | Number of children | Haven't children | 19 | 15.8 |
| | | 1 – 2 | 38 | 31.7 |
| | | 3 + | 63 | **52.5** |
| | | ***Total*** | ***120*** | ***100*** |
| 5 | Family structure | Single parent family | 16 | 13.4 |
| | | Nuclear family | 43 | 35.8 |
| | | Extended family | 61 | **50.8** |
| | | ***Total*** | ***120*** | ***100*** |
| 6 | Occupational status | In service | 117 | **97.5** |
| | | Out service | 3 | 2.5 |
| | | ***Total*** | ***120*** | ***100*** |
| 7 | Military rank | Officer | 41 | 34.2 |
| | | Vice officer | 48 | **40** |
| | | Soldier | 31 | 25.8 |
| | | ***Total*** | ***120*** | ***100*** |
| 8 | Residency | Urban | 50 | 41.7 |
| | | Rural | 70 | 58.3 |
| | | ***Total*** | ***120*** | ***100*** |

| Table 1: Continued | | | | |
|---|---|---|---|---|
| List | Characteristics | | f | % |
| 9 | Socioeconomic status | Insufficient | 16 | 13.3 |
| | | sufficient to some extent | 67 | **55.8** |
| | | Sufficient | 37 | 30.8 |
| | | ***Total*** | ***120*** | ***100*** |
| f: Frequency, %: Percentage, M: Mean, SD: Standard deviation | | | | |

| Table 2: Distribution of Sample According to their Body Mass Index, Smoking Status, and Kinship of Assistant | | | | |
|---|---|---|---|---|
| List | Variables | | f | % |
| 1 | Body mass index | Underweight (<18.5) | 0 | 0 |
| | | Normal (18.5-24.9) | 29 | 24.2 |
| | | Overweight (25-29.9) | 72 | **60** |
| | | Obesity I (30-34.9) | 15 | 12.4 |
| | | Obesity II (35-39.9) | 2 | 1.7 |
| | | Obesity III (≥ 40) | 2 | 1.7 |
| | | ***Total*** | ***120*** | ***100*** |
| 2 | Smoking | Smoker | 41 | 34.2 |
| | | Ex-smoker | 37 | 30.8 |
| | | Non-smoker | 42 | **35** |
| | | ***Total*** | ***120*** | ***100*** |
| 3 | Kinship of assistant | Father | 37 | **30.8** |
| | | Mother | 15 | 12.5 |
| | | Brother | 25 | 20.8 |
| | | Sister | 6 | 5 |
| | | Wife | 28 | 23.2 |
| | | Son | 9 | 7.5 |
| | | ***Total*** | ***120*** | ***100*** |
| f: Frequency, %: Percentage | | | | |

| Table 3: Distribution of Sample According to their Medical History of Chronic Illnesses | | | | |
|---|---|---|---|---|
| List | Illness | | f | % |
| 1 | Diabetes mellitus | No | 80 | **74.2** |
| | | Yes | 40 | 33.3 |
| | | ***Total*** | ***120*** | ***100*** |
| 2 | Heart diseases | No | 89 | **74.2** |
| | | Yes | 31 | 25.8 |
| | | ***Total*** | ***120*** | ***100*** |
| 3 | Hypertension | No | 74 | **61.7** |
| | | Yes | 46 | 38.3 |
| | | ***Total*** | ***120*** | ***100*** |
| 4 | Asthma | No | 87 | **72.5** |
| | | Yes | 33 | 27.5 |
| | | ***Total*** | ***120*** | ***100*** |
| 5 | Kidney disease | No | 83 | **69.2** |
| | | Yes | 37 | 30.8 |
| | | ***Total*** | ***120*** | ***100*** |
| 6 | Liver diseases | No | 82 | **68.3** |
| | | Yes | 38 | 31.7 |
| | | ***Total*** | ***120*** | ***100*** |
| f: Frequency, %: Percentage | | | | |

## 5. Discussion

Discussion of the Physically-Disabled Fighters' Socio-demographic Characteristics (Table 1).

The analysis of physically disabled's socio-demographic characteristics depicts that the majority of the physically disabled fighters are within (30 to 39) years old. This can be explained in a way that the fighters when assigned to combat duties, most of them were in the same age group. Our study is a descriptive study conducted to clarify the concept of activities of daily living among physically disabled fighters, not to clarify the age figures for those persons.

This finding is consistent with a study by Ali and Tawfiq at Ibn AL-Kuff Hospital in Baghdad City (2013), that aimed to assess quality of life among persons with spinal cord injuries, the study concludes that most common injured and disabled are with age of (31 to 35) years old. Another support has been found by Hamead and Abdul Wahid study which completed at the Al-Basra Rehabilitation Military Center (2020). The study to evaluate physically-disabled fighters' Quality of Life, the finding of study that most of physically- disabled fighters are within age (30 to 34). Further support found by the study was done to check the condition of physically injured combatants at Ministry of Defense Rehabilitation Military Centers, the finding of study is (43.9 %) of study sample at the (30 to 39) age group (Kadhum and Hamead, 2021).

With respect to their educational level, most of the physically- disabled fighters are primary school graduated. This finding depicts that these physically-disabled fighters did not have the opportunity to continue their education properly.

Individuals' well-being improves as a result of increased access to non-alienated paid labor and

economic resources, which create a sense of control over life, as well as access to solid social relationships, particularly marriage, which increases social support. Education can help people live healthier lives; better educated people have lower mortality rates and less major health conditions like diabetes and high blood pressure. (Ionescu, et. al., 2013).

Many studies supported with the finding of current study related to educational level in which they found in their study that injured disabled are graduated from primary schools (Atiyah & Mohammed, 2009; Khlaif & Mohammed, 2015); Hamead & Abdul Wahid, 2020); and Kadhum & Hamead, 2021).

The current study showed that most of physically disabled fighters are married. This is foreseeable in Iraqi (culture and society) marriage in Islam is a Sunnah laid by God Almighty. This finding is compatible with Atiyah and Mohammed study in Baghdad Artificial Limb Center (2009), to determine quality of life domains for adult patients with limbs loss the study reveals that (80%) of study sample are marriage.

Mar and others (2010) conducted a descriptive study about the impact of disability on numerous domains of health-related quality of life in non-institutionalized general population, the findings indicated that most of those disabled are married. Ali and Tawfiq (2013), the study indicate that majority of study sample are marriage.

Hamead and Abdul Wahid (2020) also determined that majority of physically disabled fighters is married (96.3%). Kadhum and Hamead (2021) reported that (92.3%) of study sample are marriage.

The number of children referred to (52.5%) of the study sample have more than three children. This can be explained in a way that the most of physically disabled fighters have level of education are primary school graduated and live at rural area.

Regarding family structure, (50.8%) of physically disabled fighters was live in extended families. The socio-economic status to physically disabled fighters' moderate level and private medical treatment is very expensive.

The occupational status revealed that (97.5%) of physically disabled fighters are still in service. The fighter after injury referred from combat units to rehabilitation military centers to receive medical rehabilitation treatment.

Relative to physically disabled's military rank (40%) of sample have vice officers' rank. This finding is predictable because vice officers have major proportion (ratio) at ministry of defense.

Regarding the physically disabled fighters' residential area, the study reveals that most of them are living in rural area. This can be explained by the fact that after 2003 most of young lives at rural area they left agricultural and were appointed to the security ministers.

The finding disagrees with most studies that depict that majority of physically disabled live in urban residential area (Atiyah and Mohammed, 2009; Ali and Tawfiq, 2013; Khlaif and Mohammed,2015; Hamead and Abdul Wahid, 2020; and Kadhum and Hamead, 2021).

Most of the sample are with sufficient to some extent (moderate socio-economic) status. This is a fortunate finding for them as they already had a lifelong disability condition. Such finding agrees with the early stated study by Ali and Tawfiq (2013) and Hamead and Abdul Wahid (2020).

Physical disability is a long-term loss or impairment of part of a person's body function, resulting in a limitation of physical functioning and mobility which consequently effects on their socioeconomic standing (APA, 2019).

Discussion of the General Data of the Study Sample (Table 4-2)

The study sample general data included in this part are the body mass index, smoking status, and kinship of assistance. Regarding to the body mass index, the study results indicate that the majority of the study sample body mass index is overweight. Physical disability is a long-term loss or impairment of part of a person's body function, resulting in a limitation of physical functioning and mobility which consequently to lead to overweight. A stusy of Carmona-Torres and others (2019) found in their study that most of individuals with disability have over weight which provide supportive evidence for current study finding. The persons with physical disability are more likely to be overweight or obese than those without a mobility disability (Holmgren et. al., 2018).

Studies show that physically disabled are more likely than people without disabilities to have poorer overall health, less access to adequate health care, smoking and physical inactivity. They are at greater risk for health problems and secondary conditions such as bowel or bladder problems, fatigue, injury, mental health and depression, overweight and obesity, pressure sores or ulcers and pain (CDC, 2018; Murray et. al., 2010).

Activity restrictions, as well as reduced balance and mobility, may all lead to long-term injury. Overweight and obesity, hypertension, high cholesterol levels, and impaired glucose tolerance are all biomedical risk factors that contribute to a variety of chronic health conditions. (AIHW, 2013).

Concerning the study sample smoking status, the study results indicate that 35% of them are non-smokers. The physically disabled fighters at rehabilitation centers are receive health education lecture to increase knowledge and avoid risky behaviors. The finding disagrees with most studies that depicts that physical disability is associated with smoking, (AC, 2019; Benjamin et. al., 2013; Mehta and Preston, 2012; CDC, 2011; Kanny et. al., 2011; Smith et. al., 2011; WHO, 2011)

Regarding kinship of assistant, the highest percentage referred to father as a kinship. Because the natural of Iraq society.

Discussion of the study Sample according to their Clinical Data (Tables 4-3).

The clinical data included in this part are the medical history for chronic diseases, percentage of disability, type of injury, and site of injury; regarding to the medical history for chronic diseases. Most of the physically disabled fighters in the current study experienced low rate of chronic diseases. This is a fortunate finding for them as they already had a lifelong disability condition. The finding agrees with study Hamead and Abdul Wahid (2020), at rehabilitation military centers that find most of physically disabled do not suffer from chronic diseases (63.0%).

## 6. Conclusion

Regarding the early discussion and interpretation of the study results, the current study concludes:

- Activity restrictions, as well as reduced balance and mobility, may all lead to long-term injury. Overweight and obesity, hypertension, high cholesterol levels, and impaired glucose tolerance are all biomedical risk factors that contribute to a variety of chronic health conditions.
- Sociodemographic age, education level, and socioeconomic status influence the daily life activities of physically disabled fighters.
- Physically disabled fighters suffer from their physical, emotional and social handicap as stated in their testimony.
- Mildly physically disabled fighters depend on others to complete their daily activities and need assistance with automated functions.

## 7. Recommendations

- Collaboration between the Ministry of Defense and the Ministry of Health in building and implementing health education programs regarding the promotion of daily life activities for physically disabled fighters.
- The Department of Defense should prioritize injured fighters in rehabilitation programs to improve their quality of life, in addition to supporting them financially.
- Further nationwide research could be conducted on a large sample of physically disabled fighters focusing on a variety of relevant variables that may affect their daily activities in the future.

## References

Stroke Rehabilitation Unit Orientation. (2021). *Stroke Rehabilitation Unit Orientation Module 8 : Self-Care and Activities of Daily Living*. 1–10.

Klimczuk, A. (2016a). Activities of Daily Living. *Encyclopedia of Family Studies*, *March 2016*, 1–4. https://doi.org/10.1002/9781119085621.wbefs143.

Kadhum, K.A., & Hamead, M. A. (2021). Assessment of Physically- Disabled Fighters' Health Status at Rehabilitation Military Centers in Ministry of Defense. Military study

Amini, R., Haghani, H., Masoomi, M., & Assari, S. (2010). Activity of daily living and its associated factors in war survivors with no visual acuity. *Journal of Research in Medical Sciences: The Official Journal of Isfahan University of Medical Sciences*, *15*(4), 202.

Neugebauer, J., & Tóthová, V. (2019). Physical disabilities in nursing – The use of selected tools to monitor physically disabled patients' needs. *Kontakt*, *21*(4), 344–351. https://doi.org/10.32725/kont.2019.032.

Lundberg, N., Bennett, J., & Smith, S. (2011). Outcomes of Adaptive Sports and Recreation Participation among Veterans Returning from Combat with Acquired Disability. *Therapeutic Recreation Journal*, *XLV*(2), 105–120.

Hassan, R. A., & Hasan, L. A. (2020). The Prevalence of Physical Disability in Elderly SAMPLE in Primary Health Care Centers (PHCs) in AL-Resafa Sector /Baghdad/2018. *Journal of the Faculty of Medicine Baghdad*, *62*(1,2), 27–33. https://doi.org/10.32007/jfacmedbagdad.621.21717.

Moussa, D. T., El-Naas, M. H., Nasser, M., & Al-Marri, M. J. (2017). A comprehensive review of electrocoagulation for water treatment: Potentials and challenges. *Journal of environmental management*, *186*, 24-41.

Abdel-Nasser, M., Mahmoud, K., & Lehtonen, M. (2020). Reliable solar irradiance forecasting approach based on choquet integral and deep LSTMs. *IEEE Transactions on Industrial Informatics*, *17*(3), 1873-1881.

Ionescu, D.D., Ionescu, A.M., & Jaba, E. (2013). The Investments in Education and Quality of Life, Scientific Papers, Journal of Knowledge Management, Economics and Information Technology, Available from: http://www.scientificpapers.org/wp-content/files/12_Ionescu_Jaba-THE_INVESTMENTS_IN_EDUCATION_AND_QUALITY_OF_LIFE.pdf

Atiyah, H., and Mohammed,W.( 2009) . Determination of Quality of Life for Adult Patients with Limbs Loss, *Sci. J.* Nursing,.Vol. 22, No. 1.

Ali, D. K. A., & Tawfiq, N. B. (2013). Assessment of spinal cord injured persons, quality of life. *kufa Journal for Nursing sciences*, *3*(1), 231-243.

Khlaif, A., and Mohammed, Q. (2015). Quality of Life of Physically Disabled Adults at Thi Qar Rehabilitation Center in Al-Nasiriyah City, *International Journal of Science and Research (IJSR)*. 78.96.

Hamead, M. A., & Abdul Wahid, H. S. (2020). Effectiveness of an Educational Program on Physically Disabled Fighters' Quality of Life at Rehabilitation Military Center in Al-Basra City. *Indian Journal of Forensic Medicine & Toxicology*, *14*(2).

Holmgren, M., Sandberg, M., & Ahlström, G. (2018). The complexity of reaching and maintaining a

healthy body weight–the experience from adults with a mobility disability. *BMC obesity*, *5*(1), 33.
Smith, J. R., Edland, S. D., Novotny, T. E., Hofstetter, C. R., White, M. M., Lindsay, S. P., & Al-Delaimy, W. K. (2011). Increasing hookah use in California. *American journal of public health*, *101*(10), 1876-1879.